

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Michael Best et al.

Serial No: 09/943,252

Filed: August 30, 2001

Method To Avoid Straie in EUV Mirrors

Examiner: To Be Assigned

Group Art Unit: 2872

INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §§ 1.56, 1.97 - 1.98

U.S. Commissioner for Patents and Trademarks
Washington, DC 20231


Dear Sir:

The Examiner's attention is hereby directed to the following reference(s) listed on the attached Form PTO-1449 for consideration in connection with the examination of the above-identified patent application. One copy of the reference(s) is enclosed.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the enclosed documents constitute "prior art." If it should be determined that any of the submitted documents do not constitute "prior art" under United States law, applicant(s) reserve the right to present to the office the relevant facts and law regarding the appropriate status of such documents.

Applicant(s) further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the enclosed references, should one or more of the references be applied against the claims of the present application.

Respectfully submitted,



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Date: 1/19/2002

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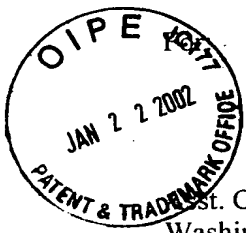
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TC 1700

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LIST OF PATENTS AND
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SP00-314

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00/043,252

APPLICANT: Best et al.

TC 1700

FILING DATE: August 30, 2001

GROUP: 2872



REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Sub-Class	Filing Date if Approp.
	AA	2,239,551	4/22/41	Dalton et al.	49	79	
	AB	2,272,342	2/10/42	Hyde	49	78.1	
	AC	4,002,512	1/11/77	Lim	148	187	
	AD	4,231,657	11/4/80	Iwamatsu	355	71	
	AE	4,344,816	8/17/82	Craighead et al.	156	643	
	AF	4,411,013	10/18/83	Takasu et al.	378	34	
	AG	4,776,696	10/11/88	Hettrick et al.	356	328	
	AH	4,911,513	3/27/90	Valette	350	96.12	
	AI	5,003,567	3/26/91	Hawryluk et al.	378	34	
	AJ	5,016,265	5/14/91	Hoover	378	43	
	AK	5,043,002	8/27/91	Dobbins et al.	65	3.12	
	AL	5,051,326	9/24/91	Celler et al.	430	5	
	AM	5,146,482	9/8/92	Hoover	378	43	
	AN	5,146,518	9/8/92	Mak et al.	385	41	
	AO	5,152,819	10/6/92	Blackwell et al.	65	3.12	
	AP	5,154,744	10/13/92	Blackwell et al.	65	3.12	
	AQ	5,165,954	11/24/92	Parker et al.	427	526	
	AR	5,173,930	12/22/92	Hoover	378	85	
	AS	5,220,590	6/15/93	Bruning et al.	378	34	
	AT	5,304,437	4/19/94	Tennant	430	5	
	AU	5,315,629	5/24/94	Jewell et al.	378	34	
	AV	5,328,784	7/12/94	Fukuda	430	5	
	AW	5,332,702	7/26/94	Sempolinski et al.	501	106	
	AX	5,353,322	10/4/94	Bruning et al.	378	34	
	AY	5,356,662	10/18/94	Early et al.	427	140	
	AZ	5,389,445	2/14/95	Makowiecki et al.	428	457	

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U.S. PATENT DOCUMENTS

Examiner	Document Number	Date	Name	Class	Sub-Class	Filing Date if Approp.
AA1	5,395,413	3/7/95	Sempolinski et al.	65	414	
AB1	5,395,738	3/7/95	Brandes et al.	430	296	
AC1	5,510,230	4/23/96	Tennant et al.	430	325	
AD1	5,521,031	5/28/96	Tennant et al.	430	5	
AE1	5,553,110	9/3/96	Sentoku et al.	117	35	
AF1	5,565,030	10/15/96	Kado et al.	451	89	
AG1	5,605,490	2/25/97	Laffet et al.	216	36	
AH1	5,698,113	12/16/97	Baker et al.	315	72	
AI1	5,637,962	6/10/97	Prono et al.	359	111.21	
AJ1	5,737,137	4/7/98	Cohen et al.	359	859	
AK1	5,815,310	9/29/98	Williamson	359	365	
AL1	5,868,605	2/9/99	Cesna	451	41	
AM1	5,880,891	3/9/99	Furter	359	651	
AN1	5,970,751	10/26/99	Maxon et al.	65	414	
AO1	5,989,776	11/23/99	Felter et al.	430	270.1	
AP1	6,013,399	1/11/00	Nguyen	430	5	
AQ1	6,048,652	4/11/00	Nguyen et al.	430	5	
AR1	6,118,577	9/12/00	Sweatt et al.	359	351	
AS1	2001/0028462	10/11/01	Ichihara et al.	356	512	

FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Sub-Class	Translation Yes	No
/	AA	WO 87/06028	10/8/87	PCT	G03F	1/00	X
/	AB	98/34234	8/6/98	PCT	G21G	4/00	X
/	AC	0 055 077	6/30/82	EPO	G03	7/20	X
/	AD	0 252 734	1/13/88	EPO	G03F	7/20	X
/	AE	0 279 670	8/24/88	EPO	G03F	1/00	X
/	AF	0 569 123	11/10/93	EPO	G03F	1/14	X
/	AG	0 708 367	4/24/96	EPO	G03F	1/00	X
/	AH	0 710 890	5/8/96	EPO	G03F	7/20	X
/	AI	0 779 528	6/18/97	EPO	G02B	17/08	X
/	AJ	0 809 125	11/26/97	EPO	G02B	6/38	X
/	AK	0 903 605	3/24/99	EPO	G02B	13/14	X
/	AL	60-173551	9/6/85	Japan (Abstract only)	G03C	005/08	X
/	AM	63-142302	6/14/88	Japan (Abstract only)	G02B	001/10	X
/	AN	63-142301	6/14/88	Japan (Abstract only)	G02B	001/10	X
/	AO	WO 01/07967	2/1/01	PCT	G03C	5/00	X
/	AP	WO 01/08163	2/1/01	PCT	C23	14/02	X
/	AQ	WO 01/75522	10/11/01	PCT	G03F	1/14	X

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TC 1700



OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)

AA	✓	Tanya E. Jewell, Four-Mirror Ring-Field System for EUV Projection Lithography, 1994, pages 98-102.
AB	✓	High Purity Quartz Glass Products, 5/17/99, http://www.toshiba-ceramics.com/quartz.html , pages 1-2.
AC	✓	Shin-Etsu Chemical Homepage, Semiconductor Materials Division, 5/17/99, http://www.shinetsu.co.jp/english/profile/division/sem-div/sem-div.html , pages 1-2.
AD	✓	Isimoto Co., Ltd., Products for Optics, 5/17/99, http://www.isimoto.ocm/isimoto/english/variation3.html , pages 1-2.
AE	✓	Isimoto Co., Ltd., Product Information, 5/17/99, http://www.isimoto.ocm/isimoto/english/procuct_info.html , pages 1-4.
AF	✓	Isimoto Co., Ltd., Purity and Chemical Reactivity, 5/17/99, http://www.isimoto.ocm/isimoto/english/feature1.html , pages 1-3.
AG	✓	The Optics Mall – Equipment/Supplies, Universal Photonics, Inc., 7/7/99, page 1.
AH	✓	Rodel Authored Papers: A Study of the Variation of Physical Properties in Random Lots of Urethane Polishing Pads for CMP, 7/7/99, http://www.rodel.com/publications/paper1.asp , pages 1-4.
AI	✓	Rodel Publications Content, Rodel Authored Papers, 7/7/99, http://www.rodel.com/publications/content.asp , pages 1-2.
AJ	✓	Rodel Publications, 7/7/99, http://www.rodel.com/publications/default.asp , page 1.
AK	✓	Cab-O-Sil Web Site, 7/7/99, http://www.cabot-corp.com/cabosil , pages 1-3.
AL	✓	Optics and Photonics News, August 1999, Vol. 10, No. 8, August 1999, pages 34-38.
AM	✓	O.V. Mazurin, V. K. Leko and L.A. Komarova, Journal of Non-Crystalline Solids 18 (1975) 1-9, Crystallization of Silica and Titanium Oxide-Silica Corning Glasses (Codes 7940 and 7971), pages 1-9.
AN	✓	S. T. Gulati and H.E. Hagy, Journal of the American Ceramic Society, Vol. 61, No. 5-6 May-June, 1978, Theory of the Narrow Sandwich Seal, pages 260-263.
AO	✓	George H. Beall, Industrial Applications of Silica, pages 470-505.
AP	✓	Extreme Ultraviolet Lithography, A White Paper Prepared by: Charles Gwyn, et al. EUV LLC, Livermore, Ca., November 1999, pp.96-141

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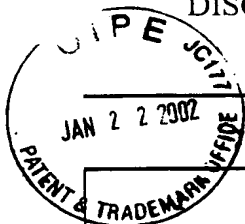
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**OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)**

	AQ	✓	H. E. Hagy and W. D. Shirkey, Determining absolute thermal expansion of titanica-silica glasses: a refined ultrasonic method, September 1975, Vol. 14, No. 9, Applied Optics, pages 2099-2103.
	AR	✓	S. F. Jacobs et al., Surface figure changes due to thermal cycling hysteresis, Applied Optics, Vol. 26, No. 20, October 15, 1987, pages 4438-4442
	AS	✓	C.W. Gwyn, R. Stulen, D. Sweeney and D. Attwood, Extreme Ultraviolet Lithography, pages 1-9 and 1-6.
	AT	✓	Richard H. Stulen and Donald W. Sweeney, Extreme Ultraviolet Lithography, IEEE Journal of Quantum Electronics, Vol. 35, No. 5, May 1999, pages 694-699
	AU	✓	William M. Tong, John S. Taylor, Stephen P. Vernon, Substrates Requirements For Extreme Ultraviolet Lithography, Lawrence Livermore National Laboratory.
	AV	✓	EUV Lithography NGL Technology Review, June 9, 1999.
	AX	✓	P.C. Schultz et al., Ultra-Low-Expansion Glasses & Their Structure in the SiO ₂ and TiO ₂ System, Papers presented to the Third International Conf. on the Physics of Non-crystalline Solids, Sheffield University September, 1970. 453-461.

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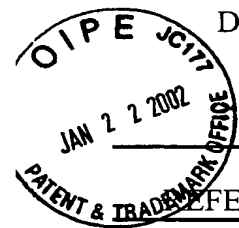
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	AA	5,315,629	5/24/94	Jewell et al.	378	34	
	AB	6,280,294	8/28/01	Miyamoto	451	34	
	AC	6,312,317	11/6/01	Oguma	451	42	
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

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FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Sub-Class	Translat Yes
	AL						
	AM						
	AN						
	AO						
	AP						
	AQ						

OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)

	AR		Gianoulakis et al. Proceedings Of the SPIE – The International Society for Optical Engineering (1999), vol. 3676, pt. 1-2, p. 598-605. ABSTRACT ONLY
	AS		
	AT		

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Information Disclosure Statement-PTO-1449 (Modified)